

- 10 -

AMENDED CLAIMS

X 1.- A system for the controlled operation of a device propelled by ^{an} electric motor,

5 said system comprising,

at least two drive wheels mounted in an axially opposed manner, equipped with control means to govern the propulsion of the drive wheels, wherein each drive wheel (4, 9) is propelled by an independent electric motor (3, 8) and independent control means provided for each electric motor, said control means comprising

10 an independent power amplifier (2, 7) which amplifies electrical signals produced by sensor means (1, 1a, 6, 6a), and supplies electric power to the corresponding electric motor (3, 8);

15 sensor means (1, 1a, 6, 6a) for detecting a mechanical force (+FI, -FI, +FD, -FD) of pushing (+FI, +FD) and pulling (-FI, -FD) applied to a push and pull element (14, 15) by a user, and transforming said mechanical force (+FI, -FI, +FD, -FD) into electrical signals that indicate the degree and the direction of the mechanical force applied on said push and pull element (14, 15),

20 said sensor means (1, 1a, 6, 6a) capable of being operated separately in such a way that each drive wheel (4, 9) is powered selectively

25 characterised in that,

30 the amplifier (2, 7) amplifies the signals in accordance with an amplification factor (KI, KD) as a function of the weight of the device (13) and supplies the electric motor in order that it propel the drive wheel (4, 9) in accordance with a torque

35 corresponding to the movement ordered by the sensor

- 11 -

5 means (1, 1a, 6, 6a) where each one of the control means comprises in addition for each power amplifier (2, 7), a feedback circuit (5, 10) which compares, by means of a comparator means, the true value of the electric power fed to the electric motor with the pre-established nominal value of the electric power needed to achieve movement of the drive wheel, and transforms differences detected between the true value and the pre-established value into error signals (+II, -II, +ID, -ID) by means of which the electrical input signals to the power amplifier are altered in order that the latter supply the necessary power (+KIFI, -KIFI, +KDFD, -KDFD) to the electric motor (3, 8) in order that it can rotate on basis of the torque needed to produce the movement ordered by the sensor means (1, 1a, 6, 6a).

2. A system in accordance with claim 1, characterised in that it has at least a first and a second electric motor (3, 8) as well as a first independent control means for the first electric motor (3) and a second independent control means for the second electric motor (8), the first control means comprising a first sensor means (1, 1a) required by a first push and pull element (14), and the second control means comprising a second sensor means (6, 6a) required by a second push and pull element (15).

3. A system in accordance with claim 1 or 2, characterised in that each one of the control means also comprises a first preamplifier means (12) which amplifies the electrical signals produced by the sensor means (1, 1a, 6, 6a) as a function of the pushing or pulling force detected (+FI, -FI, +FD, -FD), which applies preamplified signals to the power amplifier (2, 7) which feeds the drive wheel.

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4. A system in accordance with claim 1, 2 or 3, characterised in that the feedback circuit (5, 10) comprises a second preamplifier means (11) which amplifies the error signals (+II, -II).

5. A system in accordance with claim 2, characterised in that the first and the second push and pull elements (14, 15) which are connected to the first and second force sensors (1, 1a, 6, 6a), are coupled to each other through a connecting element (18), said coupling being in such a manner that the pulling or pushing of the connecting element (18) by the user can act selectively on the first (14) or the second (15) push element.

6. A system in accordance with claim 5, characterised in that the first and second push and pull elements (14, 15) connected to the first and second force sensors (1, 1a, 6, 6a), and the connecting element (18), configure an assembly formed by a handle.

7. A system in accordance with claim 5 or 6, characterised in that the push and pull elements (14, 15) are formed by bands whose first extremities are coupled to the connecting element (18) and whose second extremities are held immobile in fasteners (16, 17), and in that the first and second force sensors (1, 1a, 6, 6a) are extension-measuring gauges (1a, 6a) arranged on the bands (14, 15) in such a manner that when the connecting element is pushed or pulled, a deformation arises in the corresponding band (14, 15), said extension being detected by the pertinent gauge (1a, 6a).

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- 13 -

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8. A system in accordance with any one of the previous claims, characterised in that the device propelled (13) is a mobile x-ray unit.

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